

MINED LAND RECLAMATION -- CHECKLIST

TITLE 40-8 UCA 1953
GENERAL RULES AND REGULATIONS
RULES OF PRACTICE AND PROCEDUREMINE Silver Creek Tailings
ACT/ 1 COUNTY Summit
COMPANY REPRESENTATIVE Marvin P. Barnes
Silver State Mining, Inc.MINE PLAN DATE April 2, 1981
DATE RECEIVED April 9, 1981
DOGM LEAD REVIEWER Lee Spencer

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
	LEGAL, FINANCIAL			
M-3/MR 1/1.	Name of Applicant	X	X	Silver State Mining, Inc.
M-3/MR 1/2.	Address	X	X	44 S State # 305 SIC 8411
	Permanent	X	X	"
	Temporary	X	X	"
M-3/MR 1/3.	Company Representative	X	X	
	Name	X	X	Marvin P. Barnes
	Title	X	X	Gen. Mgr
M-3/MR 1/4.	Address	X	X	44 S. State SIC.
	Office Phone	X	X	363-1751
M-3/MR 1/5.	Location			
	County	X	map X	Summit
	Township/Range/Section	X	C. S. 10 T. 20	S. 14, 15, 22 T15, R4E
M-3/MR 1/6.	Name of Mine	X	X	Silver Creek Tailings
M-3/MR 1/7.	Mineral to be Mined	X	X	Silver Gold? other?
M-3/MR 1/8.	Other Approvals/Listed	X	X	None Other
M-3/MR 1/9.	Owners of Record of Land Affected	X	map	
M-3/MR 1/10.	Owners of Record of Minerals to be Mined	X	map	
M-3/MR 1/11.	Owners of Record of all Other Minerals	X	map	

MINED LAND RECLAMATION -- CHECKLIST

DOGM LEAD REVIEWER _____

MINE _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-3/MR 1/11a.	Notification of Other Owners in Writing	X	<i>copies of letters</i>	<i>yes</i>
M-3/MR 1/12.	Legal Right to Enter & Conduct Operations	X	<i>leases with owners</i>	
M-3/MR 1/13.	Acreage			
	1. Operation Area	X		220
	2. Access Road or Haulways	X		0
	3. Drainage System	X		0
	4. Total Land Affected			220
M-3/MR 1/14.	Principal Executives, Officer & Partners			Marvin L. Sudd.
	Name	X	X	Hans W. Rasmussen
	Title	X	X	Marvin P. Barnes.
	Address	X	X	
M-3/MR 1/15.	Previous Notice of Intention Withdrawn	X	X	No
M-3/MR 1/16.	Signed <i>Confidentiality</i>	X	C	Mining Sequence <i>? only one body.</i>
	<u>MAPS AND PLANS</u>			<u>Location Map</u>
M-3(1)	True Copy Map or Plat	X	OK	<u>Genl. Layout</u>
M(3)(1)(a)	Land Affected Delineation	X	C	Silver Tailings incomplete
M(3)(1)(b)	Within Land Affected			Layout area.
	Existing Mine Areas	X	X	Tailings Map
	Active	X	X	Plant Site
	Abandoned (prior to May, 1975)	X	Z	Location Map
	Boundaries of Surface Properties	X	Z	"
	Names of Surface Owners	X	Z	"
	Names of Mineral Owners	X	Z	"

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-2	"Land Affected means the surface and subsurface of an area within the state where mining operations are being or will be conducted, including, but not limited to: on-site private ways, roads, and railroad lines appurtenant to any such area; land excavations; exploration sites; drill sites or workings; refuse banks or spoil piles; evaporation or settling ponds; leaching dumps; placer areas; tailings ponds or dumps; work parking, storage, or waste discharge areas; areas in which structures, facilities, equipment, machines, tools or other materials or property which result from or are used in such operations, are situated. All lands shall be excluded that would be otherwise includable as land affected but which have been reclaimed in accordance with an approved plan or otherwise, as may be approved by the Board, and lands in which mining operations have ceased prior to July 1, 1977."			<p>Road Between Tailings & Plant site, - County Road</p> <p>average surface area leaching <u>50.8 acres</u> 75 acres</p> <p>silver tailings <u>132.8 acres</u></p> <p>183.6 actually disturbed applicant states 200 acres</p>
M-3(1)(c) M6	"All maps and plans prepared for submission with the Notice of Intention to Commence Mining Operations shall be of adequate			<p>Stacking shown show how tailings will be removed</p>

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-3(1)(c) M6 (continued)	scale and detail to show topographic features and clearly indicate details of the proposed operations in accordance with Rule M-3. A color code, or other legend, shall be used in preparing all maps to clearly indicate surface features of the land affected."			Operation plan for tailings removal, & replacement. Applicant should show the
M-3(1)(d)	Names and Locations Lakes, Rivers, Streams, Creeks Roads, Buildings Active, Abandoned Facilities Transmissions Lines (within 500 feet)			Show Power lines to be constructed Need to show name creek Count Rt of Way Railroad Rt of way Power lines Need to show drainage central in from the leaching area and show that creek is
M-3(1)(e)	Drainage Plan Overburden, Topsoil, Waste Stockpiles Directional Flow Constructed Drainways, Diversions, Berms Receiving Waters	need to show diversions for draining tailings		(Runoff from stern in leaching area) Water Table 1,630,000 Show design Show know stern calculator
M-3(1)(f)	Drill Holes Location Status Depths and Thickness Water Bearing Strata Mineral Deposits Toxic Materials Revegetation Materials (topsoil)	✓ ✓ ✓ ✓		
M-3(1)(g)	Locations of Disposal and Stockpile Areas Topsoil Storage Overburden Materials Waste, Tailings, Rejected Materials Tailings-Ponds Discharge Points, Water Effluents	MR-2-9	Non toxic	Where? how What is the anticipated composition of reject tailings Need to be neutralized Adam Hypochlorite

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
	<u>EFFLUENT CONTROL</u>			
M-10/11	Methods for Controlling Sediment			
M(3)(3)(11)	"Sediment Control--Mining operations shall be conducted in a manner such that sediment from areas disturbed in mining or reclamation activities is adequately controlled. The degree of sediment control shall be appropriate for the site-specific and regional conditions of topography, soil, drainage, water quality, or other characteristics."			<i>Need</i> Is PVC OK Protect PVC from operation of stacker vehicles on top. Monitoring Plan to make sure! <u>Sodium Cyanide</u> "O" loss
M-3(1)(h)	Description of Water to be Disposed Expected Acid or Salt Content Expected Toxicity Expected Impact on Downstream Waters Description of Discharge Permits	<i>monitoring</i>		
M-3(3)	<u>OPERATION PLAN/SITE CONSTRUCTION</u>			
M-3(3)/MR 1-7 MR 2-7	Mining Method General Details If Sedimentary Deposit Seam Thickness Dip Outcrop			<i>Reprocessing need expansion and how tailing materials will be removed - put back etc.</i>
MR 2-11(1)	Mining Sequence <i>Drain, 1500 yds/day scrapers @ mo/year. - Stack 15' high</i>			<i>Need sequence.</i>
MR 2-11(b)	Construction and Maintenance of Access Roads Procedures Cross-section Profile			<i>County Road. access loop only</i>

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
MR 2-11(c)	Site Preparation Trees Brush	✓	Q	after undredging then where?
M-3(2)c MR 2-11(d)	Topsoil, Root Growth, Medium	✓		6" - in spoils area or plant area?
MR-2/11(c)	Methods for Removal Amounts of Topsoil Removed Methods of Topsoil Protection			
M-10(14)	"Soils--Except where slope or rocky rocky terrain make it impossible, all surficial materials, suitable as a growth medium, prior to any major excavation, shall be removed, segregated, and stockpiled according to its ability to support vegetation as determined by soil analysis and/or practical revegetation experience. The stockpiles shall be protected in such a manner as to minimize or prevent wind and water erosion, unnecessary compaction, and contam- ination by undesirable materials. Redistribution and surficial material after final grading shall be accomplished in such a manner as to promote revegetation success."			Per SCS survey how much?
M-3(2)c MR 2-11(e)	Disturbed and Excess Materials Tailings, Waste and Reject Handling Method of Placement and Containment Stability and Erosion Control Overburden Method of Placement and Containment Stability and Erosion Control		Not address	Need

MINED LAND RECLAMATION -- CHECKLIST

DOGM LEAD REVIEWER _____

MINE _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
MR-2/10.	Determination as Toxic, Acid, Alkali Testing Procedure and Results			after mining what is toxicity is there possibility of reaching creek.
M-2 K(6)	"Toxic means any chemical or biological or adverse characteristic of the material involved which could reasonable be expect to negatively affect ecological or hydrological systems or could be hazardous to the public safety and welfare."			
M-10(6)	"Toxic Materials--All toxic or potentially toxic material, as defined by Rule M-2(k), shall be safely removed from the site or left in an isolated condition such that solid, liquid or gaseous toxic emissions to the environment are reasonably eliminated or controlled. Such isolation practices may include, but not be limited to, burial, subsurface injection, chemical precipitation or neutralization, and filtering. All appropriate regulations of the Division of Health must be complied with as well as Federal regulations."			What other industrial minerals mixed? Sodium Cyanide leach agent - The applicant wishes to sprinkle sodium cyanide leachate over 28 acres. 1. Applicant should investigate 50-100 ft year event for storm to show that no leachate will reach stream 2. Applicant should discuss the possibilities of leachate following burial. 3. What will applicant do with sodium cyanide following
M-3(2)(c) MR-2/11(e)	Method of Placement and Containment Stability and Erosion Control			

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-3(2)	<u>RECLAMATION PLAN</u>			
M-10	<p>"The following reclamation standards are established where applicable for all work or activity required to be performed in accordance with reclamation plans approved subsequent to June 1, 1978. Mine workings abandoned prior to May, 1975, need not be reclaimed unless said workings are utilized for subsequent operations. Areas on which these standards are proposed to be non-applicable will be designated on the maps submitted by this operator in accordance with Rule M-6, and may be shown on supplementary ground or air photographs.</p> <p>Said standards shall apply to all operators covered by a mining and reclamation plan and variances to all portions herein will be considered on a site-specific basis by the Division and/or Board."</p>			
M-21	<p>"Reclamation means actions performed during or after mining operations to shape, stabilize, revegetate, or otherwise treat the land affected in order to achieve a safe, stable, ecological condition and use which will be consistent with local environmental conditions."</p>			

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-3(2)/MR 2,3	Land Uses			
M-3(2)(a)	Prior Land Uses	✓	✓	
M-3(2)(a)	Current Uses	✓	✓	grazing
M-3(2)(b)	Potential Uses	✓	✓	grazing
M-10(1)	"Land Use--The operator shall abandon the area affected in a condition which is capable of supporting a postmining use that is compatible with probable land uses."	?	? (C)	open space within research park "no build zone" why no build zone?
M-3(2)/MR 2-4	Existing Vegetation Percent Cover	✓	✓	~30%
M-3(2)/MR 2-5	Existing Soils pH	✓	✓	6.8-8.2 some fir
M-3(2)/MR 2-6	Soil Lab Reference Site Elevation Site Abandonment			tailings as plant area
M-10(2)	"Public Safety and Welfare--The operator shall minimize hazards to the public safety and welfare following mining. Methods to minimize hazards shall include but not be limited to: (a) The closing of shafts and tunnels to prevent unauthorized or accidental entry.			need permit to use county road, by paddle wheel scraper.

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-10(2) (continued)	<p>(b) The disposal of trash, scrap metal and wood, unusable buildings extraneous debris and other materials incident to mining in a manner approved by the Division and in accordance with the Rules and Regulations of the Division of Health.</p> <p>(c) The plugging and capping of drill, core or other exploratory holes as set forth in Rule M-3(5).</p> <p>(d) The posting of appropriate warning signs in locations where public access to operations is readily available.</p> <p>(e) The construction of berms, fences and/or barriers above high-walls or other excavations when required by the Division."</p>			
M-10(9)	<p>Structure Removal</p> <p>"Structures and Equipment--All structures, rail lines, utility connections, equipment, and debris shall be removed from the surface prior to regrading and reclamation unless temporarily abandoned or approved by the Division for a continuing use."</p>			

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-3(2)(d) MR-2(f)	Procedures and Methods For Final Stabilization and Regrading			
MR-2(a)	Typical Cross-section of Regraded areas Specific Description of Regrading areas	✓	3:1	Past mining Topography Map
M-10(10)	<p>"Shafts and Portals--All shafts and portals shall be covered or closed and all trenches and small pits shall be backfilled or covered when a mine has been abandoned so as to eliminate any safety hazard.</p> <p>Roads and Pads--On-site roads and pads shall be reclaimed or stabilized when the operator determines that they are no longer needed for mining operations. The reclamation should include provisions for adequate surface drainage protection and unrestricted drainage crossings. When a road or pad is to be turned over to an approved continuing use, as determined by the operator, the operator shall turn over the property with adequate surface drainage, drainage structures, ditching, and in a general condition suitable for the continued use.</p> <p>Highwalls--In strip mining or open pit mining and in open cuts for pads or roadways all such highwalls shall be reclaimed by backfilling</p>			D MR Grading Regrading encasing 200' & is

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
Highwalls (continued)	<p>against them or by cutting the wall back to achieve a slope angle of 45° or less. Where the highwall is composed of solid rock; is designed to be stable utilizing benches, tie-backs, etc.; or, there is insufficient material reasonably available to backfill; or cutting the wall back would result in excessive damage to undisturbed land above the highwall; and taking into consideration suitable alternative safety measures; future land use, etc.; the Division may modify or waive the above requirements."</p>			
MR-2(e)	<p>Description of Maximum Slope Grades</p> <p>"Slopes--All waste piles, spoil piles, and fills shall, if possible, be regraded to a rounded configuration and they shall be sloped to minimize safety hazards and erosion. The angle of slope from the bottom to the top of the pile or fill can be greater than the surrounding terrain provided that the mass stability of the slope is assured and that the erosion of the slope is minimized by measures such as, but not limited to; terracing, surface drainage facilities, cross-slope ripping or scarifying and vegetation. In no case shall the slope of a pile or fill exceed the angle of repose of</p>	✓	3:1	

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
Slopes (continued)	the material or such lesser slope as required by the Division considering such factors as: land use, material properties, revegetation potential or erosion control."			
MR-2(1)	Description of Determining Stability of Reclaimed Fill Material	✓	✓	
MR-2(f) MB(2)	Description of the Method of Drainage Control for Regraded Areas "Drainages--All natural channels and associated flood plains shall not be covered, restricted or rerouted by roads, pads, piles, fills or diversions unless specifically approved by the Division after a suitable hydrologic study and incorporating a sound hydraulic design. All drainage structures, sediment or flood control structures, spoil, ore, waste, fill material and debris must be removed from natural channels and flood plains before an operator abandons the site except where approved by the Division."	None		Need to show Rule MB(2) <u>Drain lines</u> after Reclamation - It appears that applicant will move ditches to plant site reclaim on that site. Need cross sections & map of final grading.

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-10(13)	Dams--All major water impounding structures such as tailings, dams, water storage and supply dams, coal waste dams and major sedimentation control dams shall be reclaimed when abandoned so as to be nonimpounding, self-draining, mechanically stable and protected from erosion.			
M-10(3)	Impoundments--All evaporation, tailings and sediment ponds; spoil piles, fills, pads and regraded areas shall be self-draining and nonimpounding when abandoned unless previously approved as an impounding facility by a lawful state or federal agency."			
MR-2(10) <i>corrected</i>	Topsoil Distribution Plans	✓	MR 2(b)	4" 1/2" - Plate, compacted
	Specific Description of Spreading Topsoil/ Growth Medium	✓		Diced to 6"
	Approximate Thickness of Topsoil/Growth Medium	✓		Filter fabric?
MR-2(3)	Description of Surface Preparation	✓		
	Revegetation Plans			
MR-2(1)	Who Will Complete Revegetation? Seed Bed Preparation			

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
MR-2(1)	Description of Soil Treatments to Aid Revegetation	X	<u>Fertilizer</u>	Gypsum
M-10.12	"Practical land treatments may include but not be limited to: scarifying, mulching, fertilization, irrigation, chisel plowing, harrowing and the introduction of soil mycorrhiza.			
M-10.12	Description of Method for Testing Soil to Support Vegetation Fertilization Plans	X ✓	X ✓	Need Method testing USU?
MR-2-2.	Mulch Type Rate/Acre	X	C Shaw	C. ... Saturated shear tests USU/Soils Lab.
M-3(2)(e)	Seeding "A planting program as best calculated to revegetate the land affected. Where there is no original protective cover, an alternate practical procedure should be proposed to minimize or control erosion or siltation. When applicable, the objective in revegetation should be to stabilize the land as quickly as possible after it has been disturbed in order to achieve permanent and protective vegetative cover. Non-noxious native plants that will give a quick, permanent, protective cover and enrich the soil shall be given priority."	✓	✓	→ 1 ton/acre seeding pursuant to USU test. No seeding in tailings S. 21, 15 & 10 area Sanduse research park 35#/ton PLS?

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
MR 2-1	Description of Seeding Method	X		Drilled hydro seeding
MR 2-3	Justification of Seed Mix	O		Shrub
M-10(12)	"Revegetation--Where possible, a self-sustaining vegetative cover consisting of non-noxious perennial plants shall be established by the operator subsequent to final grading on the entire area affected. Plants shall be a diverse mixture of grasses, shrubs, forbs and where potential for forestation exists, trees; the mixture may include both native and introduced species. Revegetation shall be performed using professionally accepted methods such as seeding, transplanting or propagating by cuttings. (1) The species selection shall reflect the post-mining land use as set forth in Rule M-10(1)			USU?
MR-2 3.	U. S. Soil Conservation Service			Crozing? No build zone
MR-2 3.	Test Plots Use of Seed Mix	O		Test plot on tailings?
MR-2 3.	Description of Application Location/Facing (bearing) Rate Per Acre (PLS) Species Mix Per Location Season to be Planted Maintenance/Monitoring	✓ 35# ✓ autumn ✓	✓ ✓ ✓ ✓ ✓	} fenced/maintaining need for reestablishment

MINED LAND RECLAMATION -- CHECKLIST

MINE _____

DOGM LEAD REVIEWER _____

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
MR-2/5.	Description of Irrigation Methods To Establish Vegetation Inspections Frequency Purpose Livestock Grazing Fencing Vegetation Protection	✓ ○ ✓ ✓	 ✓ ✓	How well irrigation be done No monitoring? GOOD
M-3(2)(f)	Reclamation Schedule Estimated Time for Construction Estimated Time for Interim Reclamation			
MR-2 8. M-3(2)f	Estimated Duration of Mining Operation A Time Table for the Accomplishment of Each Major Step in Reclamation Plans			
M-5	Reclamation Surety Estimate Estimate Based on Reclamation Plan Cleanup and Removal of Structures Grading and Contouring Stabilization Labor Safety and Fencing Monitoring			
M-3	Standard of Reclamation Success "(2) Revegetation shall be deemed to be accomplished and successful when: (a) Species intended for revegetation by this Rule have achieved a surface cover of at least 70% of the representative vegetative communities surrounding the mine. Surrounding vegetative cover levels shall be			

MINED LAND RECLAMATION -- CHECKLIST

DOGM LEAD REVIEWER _____

MINE _____

INCLUDED				
CITATION	REGULATION	IN PLAN	ADEQUATE	COMMENTS
(a) (continued)	<p>determined by the operator using professionally accepted inventory methods and be approved by the Division.</p> <p>(b) The vegetation initiated on the area affected has survived for at least three (3) growing seasons, is evenly distributed, and is not supported by irrigation or continuing soil amendments.</p> <p>(3) Exceptions to Part 12 may be granted by the Division for areas which consist of solid rock outcrops and it is demonstrated by the operator that sufficient surficial soil does not exist for covering said outcrops. Test plots established by the operator in consultation with the Division shall demonstrate after all practical land treatments have been attempted that the revegetation standards are not attainable."</p>			
M-10 MR-8	Commitment to Rule M-10.			